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समाचार पत्रों से चयनित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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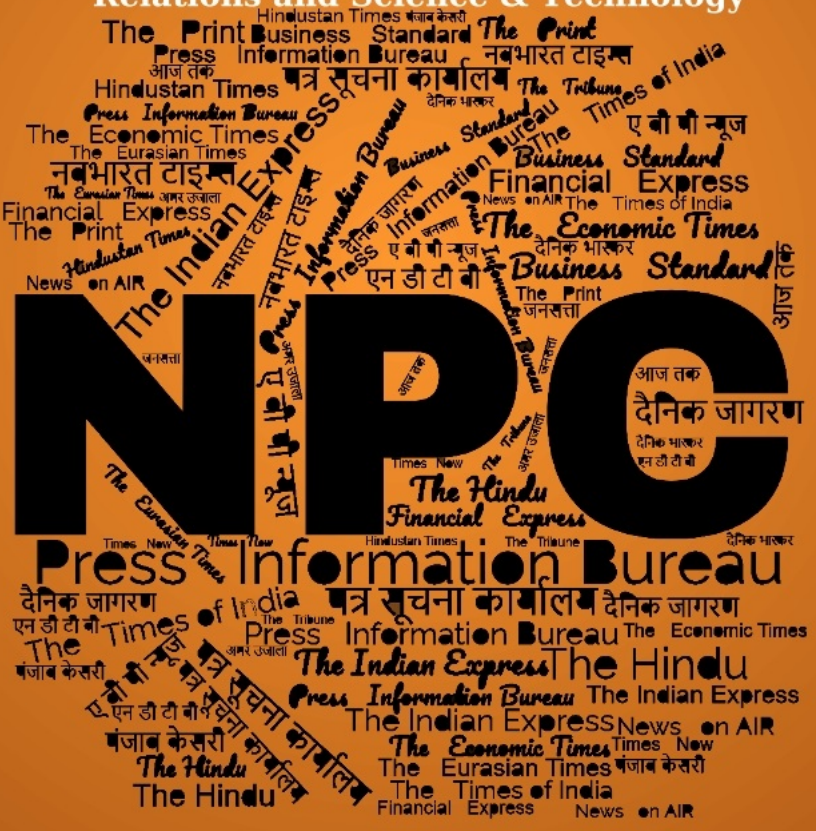

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DRDO News

हिन्दुस्तान

Sat, 14 Sep 2024

जैसलमेर में हुआ 'जोरावर' का सफल परीक्षण, सेना की बढ़ेगी ताकत

राजस्थान के जैसलमेर में भारतीय लाइट टैंक 'जोरावर' का शुरुआती ऑटोमोटिव परीक्षण किया गया है। भारतीय लाइट टैंक के डेवलपमेंटल फील्ड फायरिंग ट्रायल का पहला चरण सफल रहा।

फील्ड ट्रायल ने रेगिरेस्तानी इलाकों में इच्छित उद्देश्यों को सफलतापूर्वक पूरा किया है। टेस्ट के दौरान टैंक ने तय टारगेट पर अपेक्षित सटीकता से निशाना साधा। यह टेस्ट शुक्रवार को रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने सफलतापूर्वक किया।

सैन्सैय सूत्रों ने बताया कि हल्का होने के चलते जोरावर पहाड़ी इलाकों में बहुत ही तेजी से चल सकता है। रक्षा मंत्री मं राजनाथ सिंह ने भारतीय लाइट टैंक के सफल परीक्षणों के लिए डीआरडीओ, भारतीय सेना और सभी एसोशिएट भागीदारों की सराहना की है।

प्रारंभिरं क चरण में टैंक के फायरिंग प्रदर्शन का कड़ाई से मूल्यांकन किया गया और इसने दिए गए लक्ष्यों पर आवश्यक सटीकता हासिल की। जोरावर टैंक को रक्षा अनुसंधान एवं विकास संगठन की इकाई, लड़ाकू वाहन अनुसंधान एवं विकास प्रतिष्ठान ने लार्सन एंड टुब्रो लिमिटेड के सहयोग से सफलतापूर्वक विकसित किया है।

सूत्रों ने बताया कि जोरावर की अनोखी बात है कि इसका वजन 25 टन है।है साथ ही जोरावर टैंक की बेसिक बातों को पूरा करता है।है इसमें पावर है, है तेजी है और सेफ्टी है। जोरावर में सभी पैरापै मीटर मिल रहे हैं।हैं सेना को सौंपे जाने के बाद 25 टन वाले इन टैंक को इंडिइं यन एयरफोर्स के C-17 ग्लोब मास्टर के जरिए तैना तै ती वाली जगहों पर ले जाया जाएगा।

एक बार में 2 टैंक ले जाए जा सकेंगे। हल्का होने के कारण जोरावर पहाड़ी इलाकों में बहुत तेजी से चल सकता है। अभी टी-72, टी-90 टैंक पहाड़ी इलाकों में तैना तै त हैं, जिनकी जगह जोरावर लेगा। सैन्य सूत्रों की मानें तो इस लाइट वेट जोरावर टैंक को लद्दाख जैसे हाई एल्टिट्यूडट्यू वाले इलाकों में तैनात किया जाएगा।

रूस और यूक्रेन युद्धयु से सबक लेते हुए टैंक में लोइटरिंग म्यूनिशन यूएसवी जोड़ा गया है। जोरावर को चीन के कम वजन के टैंक ZTQ टाइप-15 के मुकाबले के लिए तैयार किया गया है। गलवान घाटी में भारतीय सेना से हुई झड़प के बाद चीन ने ZTQ टाइप- 15 टैंक तैनात किए हैं। इंडियन आर्मी ने 200 टी-72 टैंकों को तैनात किया है।

हालांकि, यह टैंक जोरावर के मुकाबले भारी हैं. ढाई साल से कम समय में 25 टन वजनी लाइट टैंक जोरावर डिजाइन करने के साथ ही उसका पहला प्रोटोटाइप भी बनाया और उसकी टेस्टिंग भी की गई है। जोरावर को सभी परीक्षणों के बाद साल 2027 तक भारतीय सेना में शामिल किए जाने की उम्मीद है।

https://www.livehindustan.com/assembly-elections/drdo-successfully-tests-zorawar-in-jaisalmer-201726294912645.html

Press Information Bureau
Government of India

Ministry of Defence

Fri, 13 Sep 2024

DRDO successfully conducts first phase of Developmental Field Firing Trials of Indian Light Tank ‘Zorawar’

Defence Research and Development Organisation (DRDO), on September 13, 2024, successfully conducted the preliminary automotive trials of the Indian light Tank, Zorawar, a highly versatile platform capable of deployment in high-altitude areas. During the field trials conducted in the desert terrain, the Light Tank demonstrated exceptional performance, efficiently meeting all the intended objectives. In the initial phase, the tank’s firing performance was rigorously evaluated and it achieved the required accuracy on designated targets.

Zorawar has been successfully developed by the Combat Vehicles Research & Development Establishment (CVRDE), a unit of the Defence Research and Development Organisation (DRDO), in collaboration with Larsen & Toubro Ltd. Numerous Indian industries, including Micro, Small, and Medium Enterprises (MSMEs), contributed to the development of various sub-systems, showcasing the strength of indigenous defence manufacturing capabilities within the country.

Raksha Mantri Shri Rajnath Singh lauded DRDO, the Indian Army, and all associated industry partners for the successful trials of the Indian Light Tank. He described the achievement as a significant milestone towards India's goal of self-reliance in critical defence systems and technologies.

Secretary, Department of Defence R&D and Chairman DRDO Dr Samir V Kamat also extended congratulations to the entire team involved in the project.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054675

Press Information Bureau
Government of India

Ministry of Defence

Fri, 13 Sep 2024

DRDO & Indian Navy achieve back-to-back success with 2nd consecutive flight test of VLSRSAM off Odisha coast

Defence Research & Development Organisation (DRDO) and the Indian Navy have conducted back-to-back successful flight tests of the Vertical Launch Short Range Surface to Air Missile (VLSRSAM). The second consecutive test was conducted on September 13, 2024, from the Integrated Test Range (ITR), Chandipur, Odisha.

The missile intercepted a high-speed aerial target, flying at a very low altitude and simulating a sea-skimming threat, which showcased its precision and capability to neutralise targets. This follows the earlier test on September 12, 2024, when the VLSRSAM missile effectively engaged another low-altitude target. These consecutive tests not only demonstrate the weapon system's reliability but also validate the recent upgrades made to various components of the system.

Raksha Mantri Shri Rajnath Singh lauded DRDO, the Indian Navy & all associated teams for the successful flight tests and stated that this missile equipped with modern technologies will give further technological boost to the Armed Forces. Secretary, Department of Defence R&D, and Chairman DRDO, Dr. Samir V Kamat also congratulated the teams involved in the flight tests of the VLSRSAM system.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054488

Defence News

Defence Strategic: National/International

Press Information Bureau
Government of India

Ministry of Defence

Fri, 13 Sep 2024

Third edition of INDUS-X Summit concludes in California

iDEX & Defence Innovation Unit ink MoU to increase co-operation in defence innovation

The third edition of the INDUS-X Summit concluded in the United States, marking a progress in the advancement of a joint defence innovation ecosystem in India and the USA. Held on 9-10 September 2024, the Summit was a landmark event jointly organised by the U.S.-India Strategic Partnership Forum (USISPF) and Stanford University.

During the summit, a Memorandum of Understanding (MoU) was signed between iDEX and the Defence Innovation Unit (DIU) under the US Department of Defence, to increase co-operation in defence innovation and deepen collaboration to facilitate industry, research, and investment partnerships among the stakeholders. Other key highlights of the Summit included announcement of a new challenge under INDUS-X, release of the INDUS-X Impact Report and launch of the official INDUS-X webpage on the iDEX and DIU websites.

The Summit offers a platform for joint showcase of next generation technologies by startups/MSMEs. It also enables critical dialogue through Senior Advisory Group and Senior Leaders Forum, the two advisory forums under INDUS-X . The discussions focused, inter-alia, on future technology trends, capacity building of startups, funding opportunities for defence innovations and strengthening defence supply chains. Distinguished experts from defence industry, investment firms, startups, academia, think tanks, accelerators, policymakers, etc. from both nations participated.

Joint Secretary (Defence Industries Promotion) Sh. Amit Satija who led the Indian delegation said that the third edition of INDUS-X Summit reaffirmed the commitment of both the countries in advancing defence technology through innovation and strategic collaboration.

The INDUS-X initiative is being steered by Innovations for Defence Excellence (iDEX) on behalf of Ministry of Defence and Defence Innovation Unit (DIU) under the U.S. Department of Defense (DoD). Since the launch of INDUS-X during the Prime Minister's State visit to the United States in June 2023, the initiative has been able to achieve significant milestones in a short span of time.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054372

Press Information Bureau
Government of India

Ministry of Defence

Fri, 13 Sep 2024

EW Conference “Spectrum” 2024 At Base Repair Depot Najafgarh, New Delhi

Base Repair Depot Najafgarh, New Delhi successfully conducted EW Conference “Spectrum” on 13 Sep 24. The theme of the conference was “**EW: Trends, Technologies & Maintenance Challenges”**. The conference was inaugurated by the Chief Guest Air Marshal Vijay Kumar Garg, Air Officer Commanding-in-Chief, Maintenance Command. In his inaugural address, the AOC-in-C brought out the importance of Electronic Warfare as one of the main pillars of Air Strategy and highlighted the need of developing and sustaining the EW systems indigenously with the participation of Indian academia, DPSUs and Indian Private Industries.

Many Academicians, Scientists from IITs, DRDO, DPSUs and industrial partners from defence equipment manufacturing industries participated in the conference. Air Commodore Amit Agrawal, Air Officer Commanding, Base Repair Depot Najafgarh, New Delhi highlighted the work being done by the depot and the support that is needed from other agencies.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054603

Press Information Bureau
Government of India

Ministry of Defence

Fri, 13 Sep 2024

Submarine Escape Training Facility – Vinetra Commissioned In Visakhapatnam

The Kalvari Submarine Escape Training Facility (Vinetra) was commissioned on 13 Sep 24 by Vice Admiral Rajesh Pendharkar, the Flag Officer Commanding-in-Chief, Eastern Naval Command, at INS Satavahana, Visakhapatnam. The facility, aims to enhance the escape capabilities of crew from a distressed Kalvari-class submarine, and has been indigenously designed and developed, keeping in line with the 'Aatmanirbhar Bharat' initiative, highlighting India's focus on self-reliance in defence capabilities.

Constructed by M/s L&T Defence as a turnkey project, the Kalvari Submarine Escape Training Facility is equipped with a five-meter escape tower integrated with an adjacent diving basin. This state-of-the-art facility will be utilized for imparting both basic and refresher escape training to the crew of Kalvari-class submarines, ensuring that they are proficient in escape procedures in the event of a submarine distress situation.

The facility "Vinetra" (विनेत्र), meaning "Trainer" represents a significant step forward in building confidence among submariners, ensuring that they are equipped with the skills and training

necessary to escape in case of any underwater emergency. This training facility also reinforces the operational readiness, safety protocols and training infrastructure of the Indian Navy.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054908

Press Information Bureau
Government of India

Ministry of Defence

Mon, 16 Sep 2024

Naval Commanders' Conference 24/2

The second edition of Naval Commanders' Conference of 2024 is scheduled at New Delhi from 17 to 20 Sep 24. The Conference is the Apex level biannual event facilitating deliberations on significant strategic, operational and administrative issues between the Naval Commanders. Held against the backdrop of evolving geo-political and geo-strategic dynamics, regional challenges and complexity in maritime security situation in West Asia, the Conference plays a crucial role in shaping future course of Indian Navy.

During the Conference, Hon'ble Raksha Mantri Shri Rajnath Singh will address the Naval Commanders on matters pertaining to national security and national expectations. The Chief of Defence Staff along with the Chiefs of Indian Army and Indian Air Force will engage with Naval Commanders to foster collaborations amongst the three Services across spectrum of conflict and convergence towards theaterisation.

The Conference will commence with the inaugural address by the Chief of the Naval Staff and he will review major Operational, Materiel, Logistic, HR Development, Training and Administrative activities pursued by the Indian Navy over last six months and deliberate upon key milestones to be crossed to safeguard maritime interests.

The Indian Navy has responded with strength and resolve against emerging threats of drones and missiles affecting safety of trade, demonstrating its capability as Preferred Security Partner in the Indian Ocean Region (IOR). The Commanders will also review the ongoing Naval projects to enhance indigenisation through 'Make in India' in consonance with the vision of complete 'Aatmanirbharta' by 2047. Towards Navy's commitment to protect India's maritime interests in the region, the Conference would witness comprehensive review of the Operational preparedness, inter alia discussions on the Navy's capability enhancement plan, promoting national vision of indigenisation, self-reliance and realising combat effectiveness of Naval forces.

The Commanders' Conference as pivotal platform upholds Navy's commitment to safeguard India's maritime interests and Navy's status as a 'combat ready, credible, cohesive and future ready force'.

https://pib.gov.in/PressReleasePage.aspx?PRID=2055366

THE ECONOMIC TIMES

Sun, 15 Sep 2024

MoD greenlights $3.9 billion US defence deal, India to seal 31 MQ-9B Predator drone purchase by October

India is preparing to finalize a significant deal with the United States for 31 weaponized MQ-9B Predator drones. This agreement is expected to be signed next month.

The defense ministry is currently finalizing a draft note for the finance ministry before seeking approval from the Prime Minister-led cabinet committee on security.

A report from the Ministry of Defense's contract negotiation committee has been accepted for this government-to-government deal, originally quoted by the US at $3.9 billion (over Rs 33,500 crore). Prime Minister Narendra Modi is scheduled to visit the US for the Quad leaders' summit hosted by President Joe Biden in Wilmington, Delaware, on September 21. "The contract should be inked in mid-Oct.

The costing, setting up of a MRO (maintenance, repair, overhaul) facility here, performance-based logistics support and other such issues have been finalized after hard negotiations," a source said to TOI.

Though the deal does not include a direct transfer of technology, the 31 drones will be assembled in India. General Atomics, the drone manufacturer, will invest in India and source over 30 percent of components from Indian companies.

Additionally, General Atomics will provide expertise to DRDO and others to develop similar drones indigenously.

Under the plan, 15 Sea Guardian drones are designated for the Navy, with 8 Sky Guardians each for the Army and Air Force.

The 31 MQ-9B drones, capable of flying for almost 40 hours at altitudes over 40,000 feet, will come equipped with 170 Hellfire missiles, 310 GBU-39B precision-guided bombs, navigation systems, sensor suites, and ground control systems.

India plans to also equip these drones with indigenous weapons such as the naval short-range antiship missiles being developed by DRDO.

These drones will serve in long-range intelligence, surveillance, reconnaissance missions, and anti-warship and anti-submarine operations. This capability is crucial given the increasing presence of the Chinese Navy in the Indian Ocean Region.

"China has been systematically deploying its survey and research vessels in the IOR. Chinese nuclear-powered submarines, which as of now come to the IOR occasionally, will be on regular deployments to the region in the near future," an officer said.

India aims to receive the initial deliveries of these drones in two to three years. The drones will be deployed at ISR command and control centers in Arakkonam, Porbandar, Sarsawa, and Gorakhpur to monitor both maritime and land borders.

https://economictimes.indiatimes.com/news/defence/mod-greenlights-3-9-billion-us-defence-deal-india-to-seal-31-mq-9b-predator-drone-purchase-by-october/articleshow/113360258.cms

Press Information Bureau
Government of India

Ministry of Defence

Sun, 15 Sep 2024

Navika Sagar Parikrama II

Indian Navy has made significant efforts to revitalise the sailing tradition, emphasising its commitment to preserve maritime heritage and promote seamanship skills.

Through the pioneering efforts of Sail Training Ships INS Tarangini & INS Sudarshini and circumnavigation onboard INSVs Mhadei and Tarini, the Indian Navy has taken a centre stage in Ocean Sailing expeditions.

Continuing with the celebration of maritime skill and adventure, two Indian Navy women officers – Lt Cdr Roopa A and Lt Cdr Dilna K would be embarking on the extraordinary expedition of circumnavigating the globe - Navika Sagar Parikrama II onboard INSV Tarini very shortly. The duo have been preparing themselves for this expedition for the last three years.

The officers as part of the six member crew had participated in trans-oceanic expedition from Goa to Rio de Janeiro via Cape Town and back last year. Thereafter, the officers undertook a sailing expedition from Goa to Sri Vijaya Puram (earlier Port Blair) and back in double handed mode. Further, the duo successfully undertook a sortie from Goa to Port Louis, Mauritius again in dual handed mode early this year.

Sagar Parikrama would be a grueling voyage requiring extreme skills, physical fitness and mental alertness. The officers have been training rigorously and gained thousands of miles of experience under their belt. They are also being trained under the mentorship of ace circumnavigator, and Golden Globe Race hero, Cdr Abhilash Tomy (Retd.), KC, NM.

The circumnavigation of INSV Tarini will be a significant step forward in India's ocean sailing enterprise and maritime endeavours, showcasing the nation's growing prominence in global maritime activities and gender equality on the high seas.

Signifying the importance of this historic event in the maritime calendar, Indian Navy proudly unveils the Logo of the expedition.

The octagonal shape in the centre depicts the Indian Navy, while the sun signifies a celestial body and the compass, guiding the sailors through the challenging seas. The sail boat making its way through vastness of the ocean symbolises the spirit of adventure and resilience of the voyagers.

The all women crew of the expedition is the testament to the Indian Navy's commitment to fostering gender equality and excellence.

https://pib.gov.in/PressReleasePage.aspx?PRID=2055169

THE ECONOMIC TIMES

Sun, 15 Sep 2024

Indian Air Force pilot Sqn Ldr SS Bhatkare develops AI-driven aircraft inspection system

Indian Air Force MCC's SU-30 MKI pilot Squadron Leader Bhatkare has developed an AI-driven aircraft inspection system. The newly developed facility will help in reducing the accidents that earlier used to happen due to human errors.

"From injury to innovation, meet @IAF_MCC's SU-30 MKI pilot, Sqn Ldr SS Bhatkare. Fueled by the vision of #AatmanirbharBharat, he has defied the odds to develop a cutting-edge, AI-driven aircraft inspection system. Discover how his pioneering work is enhancing safety for fellow aviators," the Ministry of Defence posted on X.

Squadron Leader Bhatkare shared more details about his innovation.

"Since 3- 5 years, there has been a lot of promotion given to startups and innovations and make things in India itself. That motivated me. I thought I would also innovate something. I have created this innovation of detecting aircraft panels, gauges, and covers. First of all, an inspection of aircraft needs to be done to try to find out if there is any damage. Sometimes the pilot is tired, or because of human error, it can happen that they miss out on certain things. A camera system will be developed that can scan the entire service of aircraft. This will be able to reduce the accidents that happen because of human errors," he said in the video posted by the Ministry of Defence.

Earlier on Thursday, Defence Minister Rajnath Singh attended the multilateral aerial exercise 'Tarang Shakti 2024'. He stated that the Indian Air Force and defence sector are moving ahead rapidly with the resolution of self-reliantIndia.

He added that India's defence sector has taken strong steps towards indigenisation in the manufacture of weapons, platforms, and aircraft. India has become self-sufficient to a large extent in things like Light Combat Aircraft, Censors, Radars and Electronic warfare. He further stated that we are constantly striving to move ahead in these areas.

The multilateral aerial exercise 'Tarang Shakti 2024' also showcased the display of Surya Kiran aircraft and Tarang helicopters. 'Tarang Shakti' has been organised in two phases. Its first phase was organised in Sulur, while its second phase was organised in Jodhpur.

https://economictimes.indiatimes.com/news/defence/indian-air-force-pilot-sqn-ldr-ss-bhatkare-develops-ai-driven-aircraft-inspection-system/articleshow/113361864.cms

THE ECONOMIC TIMES

Sat, 14 Sep 2024

Disengagement of troops in four areas in Eastern Ladakh, border situation stable, China says

Highlighting that troops have disengaged at four places in Eastern Ladakh, including Galwan Valley, the Chinese Foreign Ministry on Friday said India and China have agreed during their

meeting in Russia to work together to create conditions for the improvement of bilateral relations. National Security Advisor Ajit Doval and Chinese Foreign Minister WangYi held talks on the sidelines of a meeting of the BRICS high-ranking officials responsible for security matters in St Petersburg in Russia on Thursday where they discussed the progress made in the recent consultations on border issues, the Chinese Foreign Ministry said in a press release.

Asked whether the two countries were close to a breakthrough to revive the bilateralties frozen for over four years due to the military standoff in Eastern Ladakh, Chinese Foreign Ministry spokesperson Mao Ning told a media briefing on Friday that the two militaries realised disengagement in four areas and the situation along the border is stable.

"In recent years, front-line armies of the two countries have realised disengagement in four areas in the Western sector of the China-India border, including the Galwan Valley. The China-India border situation is generally stable and under control," Mao said.

Her comments come a day after External Affairs Minister S Jaishankar said in Geneva that roughly 75 per cent of the "disengagement problems" with China are sorted out but the bigger issue has been the increasing militarisation of the frontier.

Doval and Wang are the Special Representatives for the India-China border talks mechanism. Elaborating further about the Doval-Wang meeting, the Chinese Foreign Ministry release said both parties expressed the belief that the stability of the China-India relations is in the fundamental and long-term interests of the two peoples and conducive to regional peace and development.

China and India agreed to implement the consensus reached by the heads of the two countries, enhance mutual understanding and trust, maintain continuous communication, and create conditions for boosting bilateral ties, it said. Wang, also a member of the Political Bureau of the Communist Party of China Central Committee, stressed that facing a turbulent world, China and India as two ancient eastern civilisations and emerging developing countries should adhere to independence, choose unity and cooperation, and avoid consuming each other, state-run Xinhua news agency reported.

Wang expressed the hope that the two sides will properly handle their differences in a pragmatic approach and find the right way to get along with each other and push the China-India relations back on track for healthy, stable, and sustainable development. During their Thursday meeting, both Wang and Doval discussed progress made in recent consultation on border issues and agreed to deliver on the common understandings reached by leaders of the two countries, enhance mutual understanding and trust, create conditions for improving bilateral ties and maintain communication to this end, she said.

A press release on the talks issued by the Ministry of External Affairs (MEA) said India and China on Thursday agreed to work with "urgency" and "redouble" their efforts to achieve complete disengagement in the remaining friction points in eastern Ladakh. In the meeting, Doval conveyed to Wang that peace and tranquillity in border areas and respect for the Line of Actual Control (LAC) are essential for the return of normalcy in bilateral ties, the MEA press release said.

The Doval-Wang meeting came two weeks after India and China held diplomatic talks during which they agreed to intensify contacts through diplomatic and military channels to find a resolution to the outstanding issues. The Indian and Chinese militaries have been locked in a standoff since May 2020 and a full resolution of the border row has not yet been achieved though the two sides have disengaged from a number of friction points.

The ties between the two countries nosedived significantly following the fierce clash in the Galwan Valley in June 2020 that marked the most serious military conflict between the two sides in

decades. India has been maintaining that its ties with China cannot be normal unless there is peace in the border areas. The two sides have so far held 21 rounds of Corps Commander-level talks to resolve the standoff.

https://economictimes.indiatimes.com/news/defence/disengagement-of-troops-in-four-areas-in-eastern-ladakh-china-says/articleshow/113328823.cms

THE ECONOMIC TIMES

Sun, 15 Sep 2024

Iran deploys Chamran-1 satellite, prompting Western worries about ballistic missile tech progress

Iran launched its Chamran-1 research satellite into orbit on Saturday using the Qaem-100 rocket, developed by the paramilitary Revolutionary Guard, according to state-run media reports. This event is significant in Iran's aerospace program as Western nations have often scrutinized it over concerns of ballistic missile development.

The Chamran-1 satellite, which weighs 60 kilograms, was placed into a 550- kilometer orbit. Iranian media reported that the satellite is meant to test "hardware and software systems for orbital maneuver technology." Land stations confirmed initial signals from the satellite shortly after launch, validating its successful deployment.

The Qaem-100 rocket, a solid-fuel, three-stage vehicle, was previously used for another satellite launch in January. The launch site was near Shahroud, around 350 kilometers east of Tehran, as reported by AP.

The rocket bore a Quranic verse: "That which is left by Allah is better for you, if you are believers." This satellite launch came amid heightened Middle East tensions, particularly due to the ongoing Israel-Hamas conflict. Iran's recent military actions, including a missile-and-drone attack on Israel, have escalated regional tensions further.

Coinciding with the second anniversary of Mahsa Amini's death, which triggered widespread protests, the launch is also the first under Iran's new President Masoud Pezeshkian, following the death of Ebrahim Raisi in a helicopter crash earlier this year. Pezeshkian has not yet articulated his stance on Iran's space initiatives.

The launch has raised concerns among Western nations, especially the United States. US officials worry that Iran's space program could be a cover for developing intercontinental ballistic missile (ICBM) capabilities. According to US intelligence agencies and the International Atomic Energy Agency (IAEA), Iran had a military nuclear program until 2003.

However, Iran insists that its space activities are purely civilian and defensive. General Hossein Salami, head of the Revolutionary Guard, emphasized the importance of overcoming international sanctions to advance their aerospace goals. Iran has consistently denied any intentions to develop nuclear weapons, asserting its nuclear and space programs are for peaceful purposes.

https://economictimes.indiatimes.com/news/defence/iran-deploys-chamran-1-satellite-prompting-western-worries-about-ballistic-missile-tech-progress/articleshow/113362076.cms

THE ECONOMIC TIMES

Mon, 16 Sep 2024

Private sector player Nibe plans intelligence satellites constellation, sets seven-year target

Private sector defence manufacturer Nibe Limited has set an ambitious seven-year plan to establish a constellation of military grade intelligence gathering satellites that will be manufactured and launched in India. The company, which specialises in defence components and has contracts for subsystems in major projects like the Pinaka launcher, MRSAM and modular bridges, plans to launch a complement of 23 satellites at the earliest, taking it up to 40 in the longer term.

NSPL signed MoUs/agreements for a consortium of key Indian and global partners, including Larsen and Toubro, CENTUM, AgniKul, Skyroot, Space Fields, SISIR, CYRAN, and Thales Alenia Space (as Technology Partner), through this landmark initiative. With committed funding and strong R&D investments, NSPL is dedicated to addressing the space-based earth observation needs of Indian stakeholders while building the first private constellation in India.

At present, the country relies on limited sovereign satellites and expensive foreign satellite imagery that does not meet the evolving needs of national security. To address this, NSPL is undertaking a ground breaking initiative to establish private domestic Earth Observation All-Weather LEO Satellite Constellation, consisting of 40 satellites over the next five to six years.

As per plans, the satellites will offer military grade resolution of 50 cm with a high revisit time to cater for the needs of the armed forces. The constellation can be offered for either a lease term or for specific product requirements of the users. During the event, NSPL also signed agreements/MoUs with Indian and international companies, marking a pivotal step in establishing an indigenous and advanced earth observation capability for India.

Tata’s Military-grade Satellite Successfully Placed Into Orbit

India’s first military grade geospatial satellite manufactured in the private sector has been successfully launched and placed in orbit, with full functionality expected to be achieved within a few months. Built by Tata Advanced Systems Ltd (TASL) at its Vemagal facility in Karnataka, the **TSAT-1A** was onboard the Bandwagon-1 mission launched by SpaceX’s Falcon 9 rocket in Florida.

The sub- metre resolution imaging satellite has given a signal that it is in the right orbit and tests will be run on it for the next few weeks before it is fully functional, TASL officials said. The satellite will provide military grade imagery with high resolution of less than one metre per pixel that will be downloaded and processed at a ground centre in India that is being built by TASL. While India has a few military spy satellites built by ISRO, this if the first such initiative in the private sector.

https://economictimes.indiatimes.com/news/defence/private-sector-player-nibe-plans-intelligence-satellites-constellation-sets-seven-year-target/articleshow/113398737.cms?from=mdr

THE ECONOMIC TIMES

Sun, 15 Sep 2024

China testing stealth fighter jet for its 3rd aircraft carrier: Report

China is testing a new stealth fighter jet called J-35 to be deployed on its third aircraft carrier, the Fujian, which is equipped with an electromagnetic catapult unlike the other two fitted with ski-jump take-off ramps, official media reported on Sunday.

A new type of warplane was tested earlier this year on the Chinese People's Liberation Army (PLA) Navy's first aircraft carrier, the Liaoning, state-run Global Times quoted official broadcaster CCTV as saying. It added that the new aircraft could be the long-expected J-35 - China's nextgeneration carrier-borne stealth fighter jet.

China currently has two aircraft carriers, Liaoning, a refit of the Soviet-era ship, and Shandong, an indigenously built 2nd aircraft carrier commissioned in 2019. China's third aircraft carrier, Fujian, is larger than the two carriers, with a displacement of 80,000, and is currently undergoing trials.

It is the "first fully domestically developed and constructed" aircraft carrier with an electromagnetic aircraft launch system (EMALS) similar to that of the American aircraft carrier, USS Gerald R. Ford, official media reports said.

China's other two aircraft carriers are equipped with ski-jump take-off ramps, while the Fujian features a flat-top flight deck. China operates its indigenously built J-15 aircraft for its carriers. Global Times quoted experts as saying that the CCTV report is an official confirmation that China now has a new-type carrier-borne aircraft ready for service.

The report also confirmed that the new warplane is operational not only on China's third aircraft carrier, the Fujian, which is equipped with electromagnetic catapults but also on the previous two carriers, the rampequipped Liaoning and Shandong, experts said, noting that this will significantly boost the capabilities of Chinese aircraft carriers.

Hong Kong-based South China Morning Post newspaper reported that the J-35 is being developed by Shenyang Aircraft Corporation as China's second fifthgeneration fighter jet, following the J-20.

The jet is designed for use on aircraft carriers and is still in the development and prototype phase, but it is touted as the Chinese equivalent of Lockheed Martin's fifth-generation fighter jet, the F-35.

Collin Koh, a senior fellow at the S. Rajaratnam School of International Studies in Singapore, told the Post that "one most straightforward assessment is that the Liaoning, which has long been designated as a test bed for PLA carrier capabilities, is conducting experiments on the J-35 as a viable carrierborne fighter jet".

https://economictimes.indiatimes.com/news/defence/china-testing-stealth-fighter-jet-for-its-3rd-aircraft-carrier-report/articleshow/113369626.cms

The Indian EXPRESS

Fri, 13 Sep 2024

US slaps sanctions on Chinese entities for supporting Pakistan's missile program

The US State Department on Thursday imposed sanctions on a Chinese research institute and several companies, claiming they have been involved in supplying Pakistan's ballistic missile program. Along with the institute, Washington imposed sanctions on three more Chinese entities, one Pakistani company, and one Chinese individual for their involvement, State Department said in a statement.

State Department Spokesperson Matthew Miller announced that sanctions have been levied against the Beijing Research Institute of Automation for Machine Building Industry (RIAMB), which has collaborated with Pakistan's National Development Complex (NDC). The sanctions are under the missile sanctions laws, specifically the Arms Export Control Act (AECA) and the Export Control Reform Act (ECRA). RIAMB was involved in developing and producing Pakistan's long-range ballistic missiles, including the Shaheen-3 and Ababeel, and procured equipment for testing large-diameter rocket motors.

The statement also revealed that sanctions were imposed on three additional PRC-based entities and one PRC individual. The sanctioned entities are Hubei Huachangda Intelligent Equipment Company, Universal Enterprise Limited, and Xi'an Longde Technology Development Company Limited (also known as Lontek).

The individual sanctioned is Luo Dongmei (also known as Steed Luo). They were penalised for transferring equipment and technology controlled under the Missile Technology Control Regime (MTCR) Annex to a non-MTCR country, supporting MTCR Category I missile programmes. Furthermore, the US has sanctioned a Pakistan-based entity, Innovative Equipment, under the same missile sanctions laws. The statement emphasised that the US will persist in countering proliferation and related procurement activities wherever they occur.

In October of the previous year, the US had similarly targeted three China-based companies — General Technology Limited, Beijing Luo Luo Technology Development Co Ltd, and Changzhou Utek Composite Company Ltd. — for supplying missile-related materials and machinery to Pakistan. These sanctions were related to the supply of brazing materials for ballistic missile rocket engines, combustion chamber production, and machinery for solid-propellant rocket motors.

https://indianexpress.com/article/world/us-sanctions-chinese-pakistan-ballistic-missile-program-9566307/

ThePrint

Mon, 16 Sep 2024

Satellite launching spree to tie-ups with 60+ countries, why India is scaling up its space diplomacy

With plans to increase the country's space prowess by 10 times in the coming future, India has been on a signing spree with other countries for cooperation and collaboration in the critical sector.

India has signed cooperative agreements with at least 61 countries and five multilateral organisations in the space sector, with the majority being done in the last five years or so.

Experts point out that globally, India is advertising itself on two levels—as a reliable market for its space manufacturing and launching capabilities and as a trusted partner for countries with relatively limited space competencies to build their infrastructure.

The space economy is currently worth $8.4 billion in India, according to the Centre's Department of Space, and the government aims to see it grow to $44 billion by 2033. Speaking to ThePrint, S. Somanath, chief of the Indian Space Research Organisation (ISRO), explained that there is a security and defence angle to India's space diplomacy.

He said an increased presence of Indian satellites in different orbits around the Earth will help enhance the country's capacity to track movements of military troops and image large swathes of land. "Satellites, depending on its range, can observe our country's borders and our neighbouring land. By increasing our presence in space, we can increase our potential enormously. The power of any country lies in how much they have access to what is happening around them. Knowledge is power in the true sense," Somanath explained.

The ISRO chief added that a country like India, which is in the race to become a "global superpower" in the coming years, needs at least ten times its current space prowess. The space agency is working towards achieving this target. "In the next five years, we will be launching at least 50 to 70 satellites, including satellites for geo-intelligence gathering," Somanath said.

India now has diverse global partnerships with countries such as the United Kingdom, Luxembourg, Lithuania, Spain, Israel, Brazil, Singapore and Switzerland, among others.

Between 2019 and 2024, a total of 163 satellites built by the aforementioned countries were launched from India. Besides satellite launches, New Delhi has also been focusing on space cooperation with multiple countries.

Since June this year, the realm of space has emerged in various levels of talks between India and countries including the United States, the Philippines, France, Italy, Brunei Darussalam, Luxembourg, New Zealand, Chile and Nepal, among others. In recent weeks, space cooperation was part of the talks between India's Prime Minister Narendra Modi and the Sultan of Brunei Haji Hassanal Bolkiah, with both leaders assenting to renew the long-standing agreement between the two South East Asian countries on India's telemetry, tracking and command station (TTC) in Brunei.

They also looked into exploring the development of satellites and advancement of remote sensing and training. In consultations with The Philippines last Monday, the idea of space cooperation between the archipelagic country and India was broached. Last month, India promised assistance to Nepal in the form of a grant for the launch of a satellite.

Strategic nature of space

During the Kargil War (1999), India requested the US for access to the Global Position System (GPS) to identify enemy locations, but was denied. Similarly in 2022, Ukraine requested Starlink—the satellite Internet company owned by Elon Musk's SpaceX—to extend its coverage to Sevastpool in Crimea. The request was denied, which harmed Kyiv's military operations in the Crimean peninsula at that time.

Both instances indicate the importance of access to satellite navigation systems for military purposes. After the incident in 1999, India realised the need for its very own satellite navigation system.

As a result, ISRO decided to strategically design its own answer to GPS— Navigation with Indian Constellation (NavIC), which was launched on 1 July, 2013. It is a standalone navigation satellite system, which is currently being used on a regional scale but is expected to be developed in the coming years as a "Made-in-India" global satellite navigation system, and touted to be at par with the US's GPS, Europe's Galileo and China's BeiDou.

Last year, the government directed all mobile phone manufacturers to start making all their phone models compatible with NavIC, with effect from January 2023. Senior officials from the Department of Space told ThePrint that while this is not a strict deadline, they expect major mobile companies, including Samsung, Apple, and Xiaomi, to comply with the directives and accommodate NavIC in their hardware by 2025.

"The space sector is crucial to India's military capabilities. It is required to know where and how operations will happen. The capabilities in space will indicate how you fight wars on the ground. The growth in India's space programme will also have gains of strategic value," Gunjan Singh, an associate professor at O.P. Jindal Global University, told ThePrint. Anil Prakash, director general of SatCom Industry Association (SIA) of India, explained to ThePrint that the Union Ministry of Defence is increasingly focusing on space-based capabilities, looking at the whole gamut of options—from communications to navigation—to enhance its operational capabilities.

Recent changes in India's space policies have also witnessed the participation of Indian startups in this sector, with over 200 such companies developing various cutting-edge technologies with applications aimed at aiding the defence sector. Some of these technologies have been supported by initiatives such as the Technology Development Fund.

The next space race is slowly developing, especially with the US aiming to return to the Moon with a human in 2026 through its Artemis programme, and China hoping to achieve the same by 2030. India aims to send its own astronauts to the Moon in 2040. To achieve its ambitions in outer space, New Delhi has also zeroed in on enhancing its foreign collaborations and international partnerships, such as the US-led Artemis Accords, an initiative launched in 2017.

India's space diplomacy

Senior officials from the Department of Space explained to ThePrint that India is also improving its bilateral and multilateral relations through developments in the space sector. Diplomatic initiatives, such as the TTC station in Brunei, are important for India. Before the TTC centre was made operational, launches from the Satish Dhawan Space Centre in Sriharikota could not be monitored for about four to five minutes from launch due to geodetic (relating to the shape and area of the Earth) issues. That is why the station in Brunei is key to India's space programme at the crucial time of launching.

Singh explained that collaboration in the space sector is good for India to promote its soft power and also commercially viable for its companies. "India has a good platform for every country that is aspirational with aiming to have a footprint in space."

China identified the space sector as an important "digital glue" for its ambitious Belt and Road Initiative (BRI)—the $1 trillion project by Beijing which envisages new land and maritime trade routes connecting the country with Africa and the South Pacific, as reported by The Wall Street Journal.

China's space programme and its own global navigational system, BeiDou, has also gained acceptance among the countries which are part of Beijing's BRI. Thailand, Vietnam and Sri Lanka are some of the countries which agreed to cooperate on the expansion of BeiDou, indicating how space programmes can also have diplomatic benefits.

Prakash explained that since the launch of Chandrayaan-3, there has been growing interest in India's space programme, especially due to its cost effectiveness, competence and credibility. For instance, the UK and Africa have shown interest.

"The success of the Chandrayaan-3 mission has showcased India's competence and credibility with regards to its space programme. This has made other countries take note and become interested in cooperating with ISRO and the Indian private sector," Prakash said, adding that there are close to 600 companies in India's space sector today. About 350 of them are small and medium enterprises, while about 200 are startups. About 50 companies have grown due to their cooperation with ISRO in the last three decades.

"While India's private sector is growing, there are challenges including the lack of consortium building across the sector, especially as these companies are specialised in specific areas or products—all of which may be required in one mission," Prakash explained. The government expects the private sector to play a large role in achieving these targets, which would be invaluable for India's space diplomatic arm.

India wants a seat at the high table

India's space ambitions also include having a seat at the global rule-making table, one of the reasons behind it joining the Artemis Accords. The Accords indicate a level of close partnership between India and the US in the realm of space. It could potentially give India access to higher technologies in the space sector, which would be beneficial for the country.

The NASA-ISRO Synthetic Aperture Radar (NISAR) mission is an example of the higher technologies in space that can be achieved through this collaborative approach. The joint project would see the launch of the most advanced radar system on a NASA space mission. "We are pursuing bilateral and multilateral relations with space agencies and space-related bodies to build and strengthen existing ties between countries, taking up new scientific and technological challenges, refining space policies and defining international frameworks for utilising outer space for peaceful purposes," ISRO says on its website.

https://theprint.in/science/satellite-launching-spree-to-tie-ups-with-60-countries-how-india-is-scaling-up-its-space-diplomacy/2268768/

ThePrint

Sun, 15 Sep 2024

First Tejas Mk1 A to be delivered to IAF by October-end, Israeli software iterations completed

In what would be a relief for the Indian Air Force (IAF), at its wits' end trying to beef up its depleting fighter strength, the first of the 83 Tejas Mk 1A combat aircraft ordered by the force is set to be delivered by October-end, ThePrint has learnt.

Sources in the defence establishment told ThePrint that certain iterations (changes) that needed to be done with regard to Israeli software in use with the Tejas have been completed and final trials are on. However, the first Tejas will be delivered with Category B engines. Category B refers to reserve engines which may have been used in the past or those that came in and remained

unused as part of an earlier deal with American aircraft engine maker General Electric (GE) for the Tejas series.

As reported by ThePrint, brand new General Electric F404-IN20 engines will start coming in from November onwards as part of a revised schedule given by the engine maker after the issue of delay was raised by Defence Minister Rajnath Singh during his trip to Washington last month.

Originally, state-run Hindustan Aeronautics Limited (HAL) was to start delivery of the new aircraft from March as part of a contract signed with the IAF in February 2021. However, the first flight of the aircraft took place only in March, which meant that more trials will have to take place before the aircraft is handed over to the IAF.

ThePrint had then reported that the delivery of the aircraft will be delayed by at least four months due to certain changes sought by the IAF including software iterations.

“The software iterations have been completed and the first aircraft will be delivered by October end,” a source said.

In 2021, ThePrint reported that there were apprehensions within the IAF about the timely delivery of the aircraft. The scepticism at that time was around how the Tejas programme had progressed over nearly four decades.

When the LCA programme was first initiated in 1983, the plan was to release the first aircraft by 1994. But the prototype of the LCA flew only in 2001 — 18 years after the project started.

It was in December 2013 that the Tejas got initial operational clearance and in 2019, the IAF was given the first aircraft with final clearance. This was part of the 40 ordered by the IAF, four of which are yet to be delivered.

Originally, the Mk1 A version was not supposed to be there. The variant was born through a compromise reached with the IAF in 2015 when Manohar Parrikar was the defence minister.

The original plan was to go straight for a Tejas Mk-2, but this meant structural changes to the fighter, which would take more time. Instead, the IAF decided to go in for Mk 1A with four major improvements — advanced electronic radar, warfare communication systems, additional combat capability with Beyond Visual Range Missiles and improved maintenance features.

The IAF is looking at 97 more LCA Mk 1A aircraft.

Interestingly, the IAF had this week proposed a public private partnership (PPP) model to set up more production lines for the Tejas, as the force gets set to induct nearly 300 variants of the indigenous fighters over the next decade and half.

“…Issue is matching the production capability with our requirements. Our present orders of 83 LCA Mk 1A, which will be followed up with 97 more, will definitely take a few years to fructify,” IAF chief Air Chief Marshal V R Chaudhary had said addressing a press conference in Jodhpur.

He had added: “The way forward is to diversify production lines, have more public private partnerships or joint ventures with private partners to have multiple weaponry lines as well as multiple production lines.”

https://theprint.in/defence/first-tejas-mk1-a-to-be-delivered-to-iaf-by-october-end-israeli-software-iterations-completed/2268460/

ThePrint

Mon, 16 Sep 2024

Rajasthan: India-US army trains together in 'Yudh Abhyas 2024' to enhance synergy between forces

India and US army personnel on Monday trained together to bolster interoperability and enhance synergy between forces of both nations in the 20th edition of the Joint Military Exercise 'Yudh Abhyas 2024.'

Notably, army personnel have been training together at the Foreign Training Node, Mahajan Field Firing Ranges in Rajasthan, since September 9 and will continue till September 22. The Indian Army has released a video showcasing the joint training exercises, highlighting the participation of troops from both nations.

"Exercise #YudhAbhyas 2024Troops of #IndianArmy & #USA train together to bolster interoperability and enhance synergy between forces of both the Nations in the 20th edition of the Joint Military Exercise #YudhAbhyas 2024, between #India and #USA, at the Foreign Training Node, Mahajan Field Firing Ranges in #Rajasthan," Indian Army said on X.

On Sunday, the army personnel took a break and visited the historic Junagarh Fort in Bikaner, Rajasthan. Around 600 soldiers from the US have arrived in India, and they were brought to Junagarh in groups by bus and taken on a guided tour of the fort. The American soldiers were amazed by the historic Badal Mahal, Ranivas, and artillery. The army had also arranged for guides to provide historical information to the American soldiers.

The aim of the joint exercise is to enhance the joint military capability of both sides to undertake counterterrorism operations in a subconventional scenario under Chapter VII of the United Nations Charter. During the exercise, tactical drills are to be rehearsed, which include joint response to a terrorist action, joint planning, and combined field training exercises that simulate real-world counter-terrorism missions.

The 14-day exercise will see the participation of around 600 troops from a battalion of the RAJPUT Regiment along with personnel from other arms and services, while the US side is being represented by the troops of the 1-24 Battalion of the Alaska-based 11th Airborne Division.

https://theprint.in/world/rajasthan-india-us-army-trains-together-in-yudh-abhyas-2024-to-enhance-synergy-between-forces/2270060/

नवभारत टाइम्स

Sat, 14 Sep 2024

भारतीय सेना की इंफ्रेंट्री यूनिट को मिली स्वदेशी एंटी ड्रोन गन, जानिए दुश्मन के इरादों को कैसे करेगी ध्वस्त

ड्रोन के बढ़ते खतरे के बीच भारतीय सेना की इंफ्रेंट्री यूनिट को स्वदेशी एंटी ड्रोन गन मिली है और जल्द ही सेना को इससे ज्यादा रेंज वाली एंटी ड्रोन गन भी मिलेगी। इसे स्वदेशी स्टार्टअप ने बनाया है। करीब चार महीने पहले ही सेना

की एक यूनिट को ये गन सप्लाई की गई हैं। इससे कुछ बड़े एंटी ड्रोन सिस्टम को भी बनाया गया है और आर्मी और एयरफोर्स से कॉन्ट्रैक्ट साइन हुआ है और इसकी डिलीवरी नवंबर में शुरू हो जाएगी।

'एंटी ड्रोन गन और डिटेक्टर की जोड़ी'

पूरी दुनिया आजकल ड्रोन और एंटी ड्रोन की बात कर रही है चाहे रूस और यूक्रेन का युद्ध हो या इस्राइल और हमास के बीच की जंग। ड्रोन का इस्तेमाल जमकर हो रहा है। दुनिया भर की फौज ड्रोन के इस्तेमाल को लेकर सतर्क हैं। भारत में भी लगातार एंटी ड्रोन सिस्टम पर काम हो रहा है और कई स्टार्ट अप इस पर काम कर रहे हैं। बिग बैंग बूम सॉल्यूशंस ने सेना को एंटी ड्रोन गन सप्लाई की हैं। स्टार्ट अप के वाइस प्रेजिडेंट गौरव शर्मा ने बताया कि एंटी ड्रोन गन और डिटेक्टर की जोड़ी है। डिटेक्टर 360 डिग्री में चार किलोमीटर के दायर में किसी भी ड्रोन को डिटेक्ट कर सकता है। इसे एक टैबलेट से जोड़ा जाता है और अगर इसके दायरे में कोई भी ड्रोन आता है तो इसमें अलार्म बजेगा।

कैसे काम करता है**?**

डिटेक्टर पैसिव सिस्टम है यानी यह कहां पर लगाया है इसका पता नहीं चल पाएगा। इसलिए इसे लगातार ऑन रख सकते हैं। डिटेक्टर के जरिए ड्रोन की डायरेक्शन का पता चलते ही उस डायरेक्शन में एंटी ड्रोन गन को करना होता है और इसके बटन को दबाना होता है। गन से 45 डिग्री की एक बीम निकलती है जो आगे जाकर एक जाल की तरह ड्रोन को घेर लेती है और ड्रोन ब्लाइंड हो जाता है। ड्रोन के पास कोई सिग्नल नहीं रहता है और वह जाम हो जाता है। इसमें अलग-अलग तरह के ड्रोन को काउंटर करने के लिए अलग अलग तरह की फ्रिक्वेंसी है। यह गन बैटरी से चलती है जिसे मोबाइल की तरह ही चार्ज किया जा सकता है। पूरी चार्ज बैटरी 8 घंटे काम करती है। अगर सीधे पावर पॉइंट से कनेक्ट करें तो लगातार भी इसका इस्तेमाल किया जा सकता है। इसके ऊपर साइट भी लगाई जा सकती है।

पैदल सैनिकों के हिसाब से यह बनाई गई है ताकि वह इसे फॉरवर्ड पोस्ट तक ले जा सकें। कई जगह सेना की पोस्ट 15 हजार से लेकर 18 हजार फीट तक की ऊंचाई पर हैं। गन का वजन 4 किलो है और डिटेक्टर का वजन करीब 9 किलो है। गन की रेंज 2 किलोमीटर है।

प्रोटोटाइप बनाने को लिए मंत्रालय देता है मदद

आर्मी, नेवी और एयरफोर्स की जरूरतें स्वदेशी कंपनियां पूरी कर सकें इसलिए रक्षा मंत्रालय iDEX प्रोग्राम के तहत स्टार्टअप को प्रोटोटाइप बनाने के लिए फंड देता है। सेनाओं की जरूरत के हिसाब से अगर स्टार्टअप ने कुछ डिवेलप किया है तो प्रोटोटाइप के लिए मंत्रालय मदद करता है और फिर उस प्रॉडक्ट को सेनाओं के लिए लिया जाता है। इस वक्त पूरी दुनिया में ड्रोन का खतरा बढ़ा है और एंटी ड्रोन सिस्टम पर लगातार काम हो रहा है। सेना ने भी बॉर्डर एरिया में एंटी ड्रोन सिस्टम बढ़ाए हैं।

https://navbharattimes.indiatimes.com/india/indian-army-infantry-unit-gets-indigenous-anti-drone-gun-know-its-features-here/articleshow/113341005.cms

ThePrint

Sat, 14 Sep 2024

What are Storm Shadow missiles & why are they poised to raise the stakes in Russia-Ukraine war

In a move that could escalate tensions in the Russia-Ukraine conflict, the US and the UK are reportedly considering Kyiv’s request to lift restrictions on the use of the long-range air-to-surface Storm Shadow missiles, also known as Scalp, to hit targets on Russian territory.

Reports of the possible use of the missiles, which India has also integrated with the Rafale fighters, have drawn a sharp reaction from Russian President Vladimir Putin, who has raised the tactical nuclear bogey again.

He warned that such a move would lead to a direct escalation, and signal the involvement of the North Atlantic Treaty Organisation (NATO) in the ongoing war between the two countries.

Washington has till now been reluctant to provide long-range weapons to Ukraine despite repeated requests by President Volodymyr Zelenskyy for this exact reason — that the war between the two neighbours would spill out of its current confines, pulling the US and its NATO allies into a direct confrontation with Russia.

On Wednesday, The Times reported that both British Foreign Secretary David Lammy and US Secretary of State Antony Blinken, after meeting with Zelenskyy in Kyiv, said they would brief their respective leaders on the "operational details" of Ukraine's use of weapons like the Storm Shadow missiles.

Deep-strike weapons

The Storm Shadow missiles, manufactured by European defence major MBDA, are air-launched long-range, conventionally armed, deep-strike weapons, designed to meet the demanding requirements of pre-planned attacks against high-value fixed or stationary targets.

The missiles, which have a range of nearly 500 km, are designed to penetrate fortified bunkers and ammunition stores and damage airfields with high precision.

It was developed in an Anglo-French collaboration, and manufactured by a joint venture that also included Italy and used components supplied by the US. This means that all four countries will have to sign off on the export of these missiles.

The UK first sent Storm Shadow missiles to Ukraine in May 2023. It is not clear how many of these missiles are in Ukraine's possession.

For now, their use has been restricted to only occupied territory. However, now if the UK and the US lift the restrictions, Ukraine will be able to conduct strikes inside Russia, including key military sites in areas like Kursk, Millerovo, and Rostov.

Zelenskyy has repeatedly urged Western allies to allow the use of these long-range missiles within Russian territory to disrupt Moscow's military operations. Ukraine wants to use these to destroy Russian air bases and bomber fleets along with ammunition depots and control centres. Storm Shadow missiles were put into operations with the Royal Air Force and the French Air Force in 2003 and used in the Gulf, Iraq and Libya.

On Friday, Moscow's UN ambassador warned the Security Council that easing missile restrictions would escalate the conflict into a "direct war" between Moscow and NATO. Meanwhile, US officials accused Putin of attempting to intimidate NATO countries into withdrawing support for Ukraine.

European leaders have downplayed Putin's threats, with Polish Prime Minister Donald Tusk saying, "I wouldn't place too much significance on President Putin's latest remarks. They mostly reflect the difficult situation Russia is facing on the battlefield," The Guardian reported.

https://theprint.in/world/what-are-storm-shadow-missiles-why-are-they-poised-to-raise-the-stakes-in-russia-ukraine-war/2267974/

ThePrint

Sat, 14 Sep 2024

Armenia looks to India for Astra missiles, upgrade of its Sukhoi fleet

Armenia has reached out to India for possible procurement of Indian missiles including the indigenous beyond visual range Astra air-to-air missile and possible upgrade of their Sukhoi 30s, ThePrint has learnt.

Sources in the defence establishment said that the talks are on and still at a very initial stage.

Armenia is looking to upgrade its air force and is seeking help from India in terms of weaponry and maintainability of their assets, the sources added.

“The Su30s operated by Armenia are different from what we operate. So one will really have to see what all can be done. The talks are just in the initial stage,” a source told ThePrint. “They (Armenians) want to upgrade their Su30s and integrate our weapons.”

The weapons being sought by Armenia also include air-to-surface guided munitions.

There was no confirmation on whether Armenia was also seeking the air launched BrahMos missiles.

The sources explained that there are multiple protocols when it comes to exports of missiles and multiple issues have to be tackled first.

Armenia had bought four Su30s from Russia in 2019 but those did not take part in the 2020 Nagorno-Karabakh conflict with Azerbaijan as the aircraft lacked fire power including guided air-to-surface munitions.

Interestingly, Azerbaijan has beefed up its Soviet era Su25s with help from Turkey.

Another area that Armenia is looking at is maintaining issues of the Su30s and also training of its pilots, the sources said.

India operates close to about 272 Su 30 MKIs and has managed to locally manufacture some of the components of the aircraft which helps in reducing the dependability on Russia for service and spares.

Incidentally, the four Su30s operated by Armenia are largely known as “white elephants” because of large investment without being of use. On the other hand, Azerbaijan invested in drones and loitering munitions, which were able to take out multiple air defence assets of Armenia and also pulverise its armoured columns.

Since the conflict, Armenia has become a big defence export destination for India and has, in the past, bought several systems, including artillery guns besides certain kinds of missiles, mortars, radars, small arms and sight systems.

https://theprint.in/defence/armenia-looks-to-india-for-astra-missiles-upgrade-of-its-sukhoi-fleet/2267517/

FINANCIAL EXPRESS
Read to Lead

Mon, 16 Sep 2024

India's AL-31FP Engine Contract: A Catalyst for Domestic Aerospace and Defence Industry

India's MoD awards HAL a Rs 26,000-crore contract for 240 AL-31FP engines, boosting aerospace self-reliance and ties with Russia. (MoD)

India's defence sector marked a major milestone towards self-reliance this week as the Ministry of Defence awarded Hindustan Aeronautics Limited (HAL) a Rs 26,000-crore contract to manufacture 240 AL-31FP engines. These engines, crucial to powering the Indian Air Force's Su-30MKI fighter jets, underline the growing significance of domestic production in bolstering India's aerospace industry and its broader economic landscape.

The contract, announced on September 9, is a key component of India's ongoing efforts to reduce dependency on foreign suppliers while positioning itself as a global hub for advanced defence manufacturing. It also exemplifies the strong industrial ties between India and Russia, adding to the long list of collaborative defence projects that continue to reinforce this partnership.

Earlier this year, India secured several high-profile deals with Russia, including the AK203 rifles and the procurement of Mango shells. These agreements, along with the AL-31FP contract, highlight the depth of collaboration that has fostered technology transfer and indigenous manufacturing—critical pillars of India's Atmanirbhar Bharat (Self-Reliant India) initiative.

Economic Stimulus Through Indigenisation

A significant aspect of this contract is HAL's commitment to increasing indigenisation, with over 54% of engine components to be sourced locally, a figure expected to rise to 63% by the end of the production cycle. This approach is in line with New Delhi's broader push towards self-reliance in critical sectors, mitigating the risks posed by supply chain disruptions, particularly amid geopolitical uncertainties.

The AL-31FP engine contract mirrors the indigenisation framework seen in other major defence agreements, such as the AK203 rifle deal, which also emphasises local production and technology transfer. HAL's long-standing collaboration with Russian firms like Rosoboronexport has been crucial in facilitating the flow of aerospace technology into India, empowering the domestic industry.

India's reliance on imported defence equipment has been a longstanding concern, and this contract marks a critical step toward diversifying and localising supply chains. It reduces India's exposure to external pressures and international market fluctuations, reinforcing the self-reliance seen in other key projects like the RD-33 engine, which powers the MiG-29 fighter jets.

Strengthening SMEs and Supply Chain Resilience

t the heart of this contract lies the potential to energise India's small and medium enterprises (SMEs), which stand to benefit from increased participation in high-tech manufacturing. By leveraging the local supply chain, HAL is fostering not only cost efficiencies but also technical expertise and capacity-building within India's smaller companies, particularly those involved in precision engineering and advanced materials. This could have far-reaching implications for the sector, potentially positioning India as a pivotal player in global defence and aerospace manufacturing.

With global supply chains facing disruptions due to geopolitical tensions, India's focus on indigenisation is a strategic hedge against uncertainty. HAL's emphasis on local production bolsters the Indian Air Force's operational security and enhances the reliability of maintaining its fleet of Su-30MKIs.

This drive for indigenous production follows other major collaborations with Russia, such as the ongoing RD-33 engine project, which powers the MiG-29 fighters. These long-term initiatives reflect India's commitment to building a self-reliant aerospace industry, supported by technology transfers from Russian partners like the United Engine Corporation (UEC).

Advancing Technology and Strategic Autonomy

The production of AL-31FP engines is not just an industrial endeavour; it also serves as a catalyst for innovation within India's aerospace sector. HAL's development of cutting-edge technologies such as ultrasonic strain hardening and advanced materials coating underscores its role in driving domestic manufacturing capabilities forward.

India's broader defence ambitions, including indigenous fighter jets like the Tejas Mk2 and the Advanced Medium Combat Aircraft (AMCA), will directly benefit from the expertise gained through the AL-31FP engine programme. The contract is laying the groundwork for future military aircraft, reducing reliance on external technology and positioning India as a leader in aerospace innovation.

However, the challenges associated with developing indigenous jet engines—such as the setbacks seen in the Kaveri programme—illustrate that India's path to aerospace self-reliance is still complex. While the AL-31FP contract enhances HAL's capabilities, there remains a critical gap in

developing high-thrust, low-bypass engines needed for next-generation aircraft like the AMCA Mk-2. Recent government approvals for AMCA funding mark a step forward, but the lack of an indigenous engine highlights the need for further investment and technological development.

Atmanirbhar Bharat and Global Aerospace Integration

The AL-31FP engine deal is emblematic of Prime Minister Narendra Modi's Atmanirbhar Bharat initiative, a broader strategy to transform India into a global hub for defence manufacturing. In recent years, India has moved towards indigenous production, not only to bolster national security but also to stimulate economic growth.

However, transitioning from being one of the world's largest arms importers to a self-reliant defence producer is fraught with challenges. Building the industrial capacity required for full autonomy in critical technologies, particularly aerospace engines, demands sustained collaboration between the government, private sector, and global partners.

India's ongoing efforts to develop a new high-thrust engine for the AMCA Mk-2, in partnership with foreign companies like Safran of France or Rolls-Royce of Britain, illustrate the strategic importance of international collaboration. As the AL-31FP contract progresses, it is vital that lessons from previous programmes, like the Kaveri engine, inform future aerospace initiatives.

The RD-33 and AL-31FP projects, part of India's long-standing partnership with Russia, may not attract as much attention as high-profile air defence systems, but they represent the cornerstone of India's evolving expertise in the complex and highly technical domain of high-performance aero engines.

Scaling-up for the Future

The AL-31FP engine contract is a significant milestone in India's journey towards strategic autonomy in defence manufacturing. Its immediate effects will be felt in job creation and technological advancement, but the long-term impact lies in its potential to transform India's defence industry into a global competitor.

As HAL scales up production and strengthens its partnerships with domestic suppliers, the benefits will extend beyond the aerospace sector, fostering broader economic development and technological innovation. For India, the AL-31FP deal is not just another defence contract—it is a critical steppingstone in the country's quest for self-reliance, navigating the complexities of aerospace technology while securing its place in the global defence industry.

https://www.financialexpress.com/business/defence-indias-al-31fp-engine-contract-a-catalyst-for-domestic-aerospace-and-defence-industry-3612046/

Press Information Bureau
Government of India

Ministry of Science & Technology

Fri, 13 Sep 2024

A cost-effective solution for friction and wear management in Internal Combustion Engines

Scientists have found a low-cost solution called nanosecond laser surface texturing to increase lubrication of the moving parts within the engine can enhance engine performance.

Internal combustion (IC) engines represent a backbone of modern transport, with millions of vehicles run worldwide. Still, their efficiency leaves room for improvement. One big challenge to the performance of an IC engine is the friction and wear between moving parts, which causes enormous energy loss and, as a result, low fuel economy.

Researchers at the International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), an autonomous R&D Centre of Department of Science and Technology, Govt. of India, have come up with a solution to address this problem, and that is nanosecond laser surface texturing. This timely approach seeks to enhance tribological performance (lubrication of the moving parts within the engine) in gray cast iron applied to a diversity of critical engine components, which include piston rings and cylinder liners.

A significant proportion of the energy supplied to IC engines is lost due to thermal and frictional dissipation. The frictional losses for IC engines are nearly 50% in the piston-cylinder system. Of these, it has been found that 70%-80% occur in the piston rings: top compression ring, oil control ring, and second compression ring. The extent of these losses depends largely on the tribology - the study of friction, wear, and lubrication of the moving parts within the engine.

This tribological performance is, in turn, influenced by the geometry and texture of the surfaces in contact. Specifically, textured surfaces can serve multiple functions. First, they can act as reservoirs for lubricants, allowing oil to be delivered more effectively to the contact zones where friction occurs. Second, they can trap wear debris, thereby reducing abrasive friction. Third, textured surfaces have the potential to improve hydrodynamic lubrication, which occurs when a full film of lubricant separates two surfaces, thus minimizing contact and reducing wear.

Historically, what has been done to improve tribological performance is that various surface texturing technologies have been applied, such as vibrorolling, abrasive machining, reactive ion etching, lithography, abrasive jet machining, and chemical etching.

All of these try to make micro-textures on the material surface so that it can enhance lubrication and reduce friction. However, a common drawback of these processes is the lack of uniformity in the surface patterns and reproducibility they produce.

Non-uniform undulations may cause variable tribological performance, thus decreasing the effectiveness of such methods. The disadvantages of the conventional texturing techniques have led to a demand for a more reliable technology for creating surface textures with dimensionally

controlled features. It is in this background that laser surface texturing (LST) comes into the picture. It provides better control over the shape and size of the surface textures, whether dimples, grooves, or any other patterns, with a fast processing rate. Therefore, LST has proved to be a more beneficial methodology in improving the tribological properties of materials.

ARCI researchers have focused on a less expensive alternative: nanosecond laser surface texturing. Nanosecond lasers, with a 100 nanosecond pulse duration and a wavelength of 527 nanometers, can produce high-quality surface textures rather cost-effectively compared with the femtosecond laser. This makes nanosecond laser surface texturing a more practical solution for industrial applications. In this work, ARCI researchers created micro-groove and micro-crosshatch patterns on the gray cast iron surfaces using a nanosecond laser, as shown in Figure 1.

The laser treatment can create micro-textures on the surface and thereby expose graphite flakes, which can act as solid lubricants. Through this work, these researchers aim to improve the friction and wear characteristics of gray cast iron under dry conditions (no lubrication), which are particularly challenging because there is no lubricating film to mollify friction and a combination of different sliding speed and normal force condition. After making these laser-textured surfaces, have rigorously performed tribological tests to determine the effectiveness of laser-textured surfaces. These were conducted through a ball-on-disk tribometer, which simulates sliding contact between two surfaces. The tribometer allows to measure both friction and wear in a controlled environment.

In tests conducted under different conditions, the laser-textured surface demonstrated high improvement in reducing friction and raising wear resistance, as shown in Figure 2.

These results were not limited to the combustion engine. Optimising laser textured surfaces holds immense potential for improving component performance in general from various industries. Reduced friction and wear by this technology allows more efficient, sustainable, and cost-effective solutions for industries ranging from the automotive industry to manufacturing.

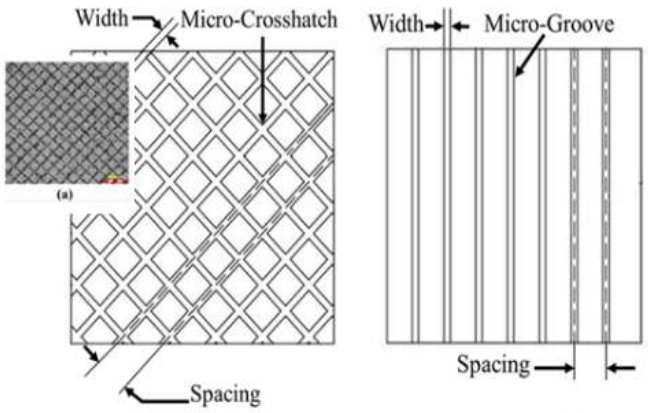

Figure 1: *Schematic of Micro-crosshatches and Micro-grooves with their morphology*

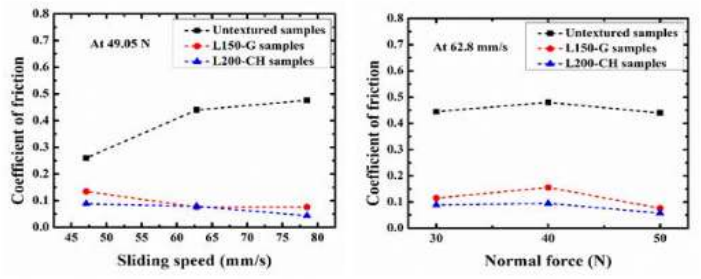

Figure 2: Coefficient of friction as function of sliding speed and normal force for untextured, micro-crosshatches and micro-grooves samples

The ARCI's laser surface texturing technology represents a significant step forward in tribological engineering. With its ability to enhance the performance of critical components while remaining cost-effective, this technology has the potential to revolutionize the way industries approach friction and wear management.

https://pib.gov.in/PressReleasePage.aspx?PRID=2054456

Press Information Bureau
Government of India

Ministry of Science & Technology

Sat, 14 Sep 2024

Global Bio-India 2024 successfully concludes with India Showcasing Its Biotech Prowess

Indian Biotech Startups launched 11 Products at the Global Bio-India 2024

The fourth edition of Global Bio-India 2024 successfully concludes after showcasing India's Biotech Prowess. The global event organized by Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India, along with its Public Sector Undertaking, Biotechnology Industry Research Assistance Council (BIRAC) from 12th – 14th September, at Pragati Maidan, New Delhi.

Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Minister of State (Independent Charge) for Earth Sciences, MoS PMO, Department of Atomic Energy and Department of Space, MoS Personnel, Public Grievances and Pensions inaugurated the annual conference, it being a three-day event was the largest representation of entire biotechnology stakeholders in the country to national and international biotech community.

Global Bio-India 2024 theme highlighted the potential and opportunities in 'Biotech Innovation' and 'Bio-manufacturing' and its impact on the Bioeconomy.

At the valedictory session, Announcement of Letters of Intent with BIRAC were exchanged by the Children's Investment Fund Foundation and IPE Global for co-funding partnerships.

One of the highlights was that the Indian biotech startups took center stage with the unveiling of 11 products that showcase the country's emerging talent in biosciences.

Exceptional contributions to the biotech industry were recognized with awards namely:

- BIRAC Innovators Awards
- Best Startup Exhibitor Awards
- Best Incubator Exhibitor Awards
- BioE3 Competition Awards

The ceremony also marked the Launch of Calls for Proposals under the prestigious i4 (Innovation for Industry) and PACE (Promoting Academic Collaboration and Entrepreneurship) programs, furthering the Government's commitment to fostering innovation.

Prof. V. Ramgopal Rao, Group Vice Chancellor, Birla Institute of Technology and Science (BITS) Pilani and Former Director of IIT-Delhi, was the Guest of Honor. He emphasized the need for India to develop organizational models similar to BIRAC for other emerging technologies like nanotechnology and quantum technology. He also stressed the importance of fostering deep tech startups led by PhDs and academic faculty, urging institutions to encourage entrepreneurship.

Prof. Rao also paid a heartfelt tribute to the late Dr. M.K. Bhan, the visionary behind BIRAC, for his instrumental role in shaping India's biotech sector.

Dr. Rajesh S Gokhale, Secretary, DBT, DG, iBRIC, Chairman, BIRAC; Dr. Alka Sharma, Senior Adviser, Scientist 'H', DBT; Dr. G.S. Krishnan, President, ABLE; Dr. Jitendra Kumar, MD, BIRAC and Ms. Shilpy Kochhar, Head-Business Development & Communications, BIRAC joined for the valedictory session thanked all the participants, speakers, panelists, partners, organizers.

Global Bio India demonstrated India's potential in the biotech sector with evidence, both within the country and to the world, paving out a roadmap to leapfrog the Biotech innovation and Bio-manufacturing in the country.

https://pib.gov.in/PressReleasePage.aspx?PRID=2055047

Mon, 16 Sep 2024

Metal part 3D printed on International Space Station for first time

A metallic component has been 3D printed for the first time in space. The 3D metal printer used for producing the part has been jointly developed by the European Space Agency (ESA) with Airbus and its partners. The 3D printer was ferried to the orbital platform by a Cygno cargo freighter early in the year, and had previously produced some 3D printed shapes to demonstrate the capabilities of the printer. The 3D printer has now produced an entire metallic part for the first time. The printer was tested for printing the same part on the Earth before it was launched into orbit.

The same printer produced the same part as part of a test on Earth, prior to the launch. (Image Credit: ESA). These metallic 3D prints will be brought back to the Earth so that scientists can carefully examine the prints and assess their quality. There were plastic 3D printers sent up to the International Space Station previously, but ESA's technology demonstration is the first 3D metal printer to operate in a microgravity environment.

Director of Human and Robotic Exploration at ESA, Daniel Neuenschwander says, "With the printing of the first metal 3D shape in space, ESA Exploration teams have achieved a significant milestone in establishing in-orbit manufacturing capabilities. This accomplishment, made possible by an international and multidisciplinary team, paves the way for long-distance and long-duration missions where creating spare parts, construction components, and tools on demand will be essential."

Humans are not Tortoises

So far, humans have been carrying around their houses like tortoises when it comes to space exploration. As humans plan for more ambitious missions to the Moon and Mars, it becomes

necessary to think about ways to use the locally available resources for producing the tools and parts needed for repairs and maintenance, as well as regular operations. On the International Space Station, replacement parts and tools have to be transported from Earth. A 3D metal printer expands the production capabilities during space missions.

https://www.news9live.com/science/metal-part-3d-printed-on-international-space-station-for-first-time-2695456